

REMARKS

In the Action, claims 2, 5-7 and 9-14 are rejected. In response, claims 2, 5, 7, 13 and 14 are amended, and claims 15-18 are added. Thus, the pending claims in this application are claims 2, 5-7 and 9-18, with claims 2, 5, 13 and 14 being independent.

Independent claims 2, 5, 13 and 14 are amended to delete the negative limitation referring to the offset or gravure printing as noted in the Action. The claims are also amended to define the film transfer method being by a gate roll coater at a coating speed of 1100 m/min or more. Support for this feature is found on page 13, lines 3-12, and page 16, lines 21-25. Claims 15-18 are added to depend from claims 13 and 14 and define the gate roll coater including an applicator roller, and inner roller and an outer roller and where the peripheral speed ratio of the inner roller and outer roller to the applicator roller is 50-95%.

The transfer roll coater disclosed in the specification including an applicator roll, an inner roll and an outer roll is a gate roll coater as known in the art. See, for example, the enclosed copy of the article in Japan Tappi Journal, May 1985, Vol. 39, No. 5 and the English translation thereof. As described in the English translation, a gate roll coater as shown in Figure 5-1 on page 442 of the article includes an applicator roll, an inner gate roll, and an outer gate roll. Accordingly, the specification supports the claims as understood by one of ordinary skill in the art.

In view of these amendments and the following comments, reconsideration and allowance are requested.

Rejection Under 35 U.S.C. § 102(b)

Claims 2, 5-7 and 9-14 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,197,155 to Wurster et al. Wurster et al. is cited for allegedly disclosing each of the claimed features. The claims as amended are not anticipated by Wurster et al.

since Wurster et al. does not disclose or suggest the claimed method of producing a coated paper for offset printing or gravure printing by applying the coating color by a gate roll coater at a coating speed of 1100 m/min or more. Wurster et al. as noted in the Action discloses the use of a Massey coater in column 4, line 25, as the transfer roll coater. However, a Massey coater is different from a gate roll coater and is not capable of applying a coating at a coating speed of 1100 m/min or more as claimed. See, for example, the enclosed copy of the Japan Tappi Journal, May 1985, Vol. 39, No. 5, and the English translation thereof. As specifically disclosed in Table 1 of the English translation, a Massey roller has a maximum speed of about 600 m/min, while a gate roll coater has a maximum speed of about 1000 m/min. Thus, Wurster et al. does not disclose the claimed method or a method capable of applying the coating at a coating speed of 1100 m/min or more.

Wurster et al. also fails to disclose the step of applying a color coating containing 0.1 to less than 2.0 parts by weight polyvinyl alcohol per 100 parts by weight of pigment as an auxiliary at a coating weight per side of 7 g/m² or more, or the step of applying a coating color containing a pigment, adhesive, 0.1 to less than 2.0 parts by weight polyvinyl alcohol and less than 2 parts by weight of the starch where the coating color is applied using a gate roll coater at a coating speed of 1100 m/min or more. Accordingly, the claims are not anticipated by Wurster et al.

Wurster et al. is directed to a glossy coated web printing paper for use with cold set inks in cold set printing process. Wurster et al. does not disclose the claimed method of producing a coated paper by applying a coating color containing a pigment, an adhesive and a polyvinyl alcohol as an additive in the amounts recited in claim 2. Wurster et al. further fails to disclose the claimed method of applying the coating color containing a pigment, polyvinyl alcohol and a starch as in claim 5. Thus, these claims are not anticipated.

Wurster et al. also fails to disclose a method of offset printing or gravure printing with an offset or gravure printing ink on a coated paper where a coating color containing a pigment, an adhesive and polyvinyl alcohol as an additive in the amounts recited in claims 13 and 14 by a gate roll coater at a coating speed of 1100 m/min or more. Accordingly, these claims are also not anticipated.

Rejection Under 35 U.S.C. § 103(a)

Claims 2, 5-7 and 9-14 are rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,030,325 to Saji et al. in view of U.S. Patent No. 4,154,899 to Hershey et al. Saji et al. is cited for disclosing a method of producing coated paper using a coating composition that includes a pigment and an adhesive where the adhesive can be polyvinyl alcohol. Hershey et al. is cited for disclosing a method of producing a coated paper using a color coating containing a pigment and adhesive and polyvinyl alcohol.

The cited patents either standing alone or in combination do not disclose the claimed method of offset printing or gravure printing on a coated paper where a color coating is applied by a gate roll coater at a coating speed of 1100 m/min or more. Saji et al. and Hershey et al. generally refer to various coating devices, but provide no suggestion of the claimed method using a gate roll coater or applying the coating color at a coating speed of 1100 m/min or more. The invention as claimed is directed to a method of producing a coated paper for printing using a coating color that enables an increase in the coating weight and coating speed while maintaining the transferability of the coating from the coating roller to the paper where the resulting coated paper exhibits excellent printing properties. Page 8, lines 20-25 of the specification discloses the transferability of the coating color to the base paper being dramatically improved and providing excellent sheet gloss and density by the use of 0.1 parts to less than 2 parts by weight polyvinyl alcohol as an auxiliary and not as the

primary binder. In the prior processes, such as in Saji et al. and Hershey et al., it is difficult to increase the coating weight while maintaining good transferability from the coating roller to the paper. Applicants discovered that the coating weight of the coating color can be increased by film transfer methods to attain a coating weight on one side of the paper in an amount of 7 g/m² or more. The polyvinyl alcohol is used in addition to the adhesives that are commonly used in the prior processes.

In the claimed invention, polyvinyl alcohol used in combination with the adhesives improves the transferability of the coating color from the transfer roll coater or metering press onto the base paper. The polyvinyl alcohol increases the coating weight and maintains the coating efficiency and enables the production of coated papers for printing with improved printability and offset printing and gravure printing. These features are not disclosed or suggested in the cited patents.

Saji et al. and Hershey et al. do not relate to a film transfer method or to a method using a gate roll coater to apply the color coating. Saji et al. specifically discloses the polyvinyl alcohol as being a conventional adhesive. Furthermore, Saji et al. specifically discloses the adhesive being in an amount of 5 to 50 parts by weight based on 100 parts by weight of the pigment. Thus, Saji et al. specifically discloses the use of polyvinyl alcohol as an adhesive in an amount outside the claimed range. Accordingly, Saji et al. provides no motivation or incentive to one of ordinary skill in the art to form a coating color containing the claimed amounts of polyvinyl alcohol below the minimum amount indicated as being necessary by Saji et al.

Saji et al. furthermore does not suggest the use of polyvinyl alcohol as an additive or auxiliary in conjunction with the conventional adhesives. There is no suggestion of the claimed amounts of polyvinyl alcohol to improve the transferability of the coating from the coating roller to the paper to enable a coating weight of 7 g/m² or more as claimed. Saji et al.

only suggests polyvinyl alcohol as a conventional adhesive, and thus, provides no guidance or motivation to use polyvinyl alcohol in the claimed amounts to attain the claimed features.

Hershey et al. does not provide the deficiencies of Saji et al. Hershey et al. relates to a method of producing a coated paper for printing where the coating contains 1.5 parts by weight polyvinyl alcohol based on the weight of the pigment. However, Hershey et al. clearly fails to disclose the claimed method of applying the coating color by a gate roll coater at a coating speed of 1100 m/min or more. One feature of the invention is based on the discovery that the additional polyvinyl alcohol in the claimed amounts in combination with the adhesive provides improved transferability from the coating roller to the paper to enable an increase in the coating weight. Hershey et al. provides no motivation or incentive to include polyvinyl alcohol in the claimed amounts in combination with the conventional adhesives of Saji et al.

The combination of Saji et al. and Hershey et al. do not suggest the claimed method of applying a coating color containing a pigment, an adhesive and 0.1 to less than 2 parts by weight polyvinyl alcohol based on the weight of the pigment and applying the coating color by the gate roll coater at the claimed coating speed to attain a coating color of 7 g/m² or more. The combination of Saji et al. and Hershey et al. do not disclose the method of applying the coating color containing a pigment, an adhesive, polyvinyl alcohol as an auxiliary component where the adhesive is two parts by weight starch as in claim 5. Accordingly, claims 2 and 5 are not obvious over the combination of Saji et al. and Hershey et al.

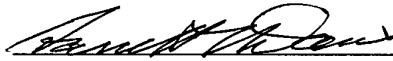
The combination of Saji et al. and Hershey et al. also fail to disclose the method for offset printing or gravure printing with an offset printing or gravure printing ink on a coated paper by applying a coating color containing a pigment, an adhesive and the claimed amounts of polyvinyl alcohol per 100 parts by weight of the pigment by a gate roll coater at a coating speed of 1100 m/min or more to attain a coating weight of 7 g/m² or more. Accordingly,

independent claims 13 and 14 are not obvious over the combination of Saji et al. and Hershey et al.

The dependent claims are also allowable as depending from an allowable base claim and for reciting additional features of the invention that are not disclosed or suggested in the cited patents. Saji et al. and Hershey et al. do not disclose the adhesive being present in an amount of 5 to 50 parts by weight as in claim 10, 10 to 30 parts by weight as in claim 11, or the coating color comprising 40 to 70 weight% solids as in claim 12, in combination with the method of claim 2. The cited patents further fail to disclose a method of producing a coated paper where the coating color includes 18 parts by weight or less of an adhesive as in claim 6, the coating paper being suitable for web offset printing as in claim 7, or the resulting coated paper of claim 9, in combination with the method of claim 5. Accordingly, these claims are allowable over the art of record.

In view of these amendments and the above comments, reconsideration and allowance are requested.

Respectfully submitted,


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